

System and Method For Multiple Channel Statistical Re-Multiplexing

Abstract of the Disclosure

A system and method for multiple channel statistical re-multiplexing preferably comprises a plurality of encoders each coupled to a respective channel and producing a compressed channel, a statistical re-multiplexer and a transport medium. The statistical re-multiplexer preferably has a plurality of inputs and an output for combining the input compressed channels into a single output bit stream. The statistical multiplexer further comprises a plurality of de-multiplexers and a scheduler & multiplexer having a plurality of buffers, a scheduling table and a controller. Each of the buffers receives and stores compressed data from a respective encoder for a respective channel. The output of each buffer is coupled to a respective de-multiplexer that re-encodes the compressed channel in response to control signals from the scheduler & multiplexer. The scheduler & multiplexer receive the re-multiplexed streams from the re-multiplexers, and combine them into a single stream that matches the bandwidth of the physical transport medium. The present invention also includes a method for performing statistical re-multiplexing including the steps of: performing bit stream analysis; determining a sending rate for each channel; determining whether the combined bandwidth requirement of all the channels exceeds the channel capacity; performing rate adjustment by re-multiplexing the channels if the combined bandwidth requirement of all the channels exceeds the channel capacity; scheduling the channels for transmission, combining the channels and transmitting the combined channels over the transport medium.